

Otay Mesa

8.1.9



© City of San Diego, 2003

This page is intentionally left blank.

8.1.9.a *Robinhood Ridge (J 4-5)*

Site Description and Existing Conditions

Robinhood Ridge (J 4-5) is comprised of two conserved sites, totaling 16 acres, located south of Avenida de las Vistas and west of Vista Santa Domingo. This site was preserved as mitigation for the Robinhood Ridge project (LDR No. 86-1014), and includes vernal pool restoration and upland restoration components. Robinhood Ridge is adjacent to the MHPA and is zoned Open Space; residential neighborhoods lie to the north and MHPA open space to the south.

Eighty-three vernal pools (24,362 ft² of [6.021 acres] basin area) were mapped at Robinhood Ridge, including 22 enhanced basins, and 51 restored basins. Stockpen gravelly clay loams have been re-vegetated with coastal sage scrub. The vernal pools support populations of *E. aristulatum*, *N. fossalis*, *P. nudiscula*, *B. sandiegonensis*, and *S. woottoni*.

Impacts to approximately 404 ft² of vernal pools and 2,950 ft² of road pools were approved as part of the Robinhood Ridge project.

Prior to preservation and vernal pool restoration, the site was impacted by off-road vehicle use and illegal dumping. However, Mima mounds and coastal sage scrub vegetation persisted in some areas. The site was fenced as part of the restoration process, which began in 1999.

Threats

Restoration Success

The *Vernal Pool Mitigation Plan* (Helix, 1998) specifies success criteria for the restored vernal pools, including species richness, vegetative cover, target species, and hydrologic regime. Remedial measures, approved by the City, will be required if restoration success criteria are not met within the specified time period.

Invasive Species

Prior to restoration, non-native invasive species were introduced through disturbance associated with off-road vehicle use, etc. Both uplands and vernal pools are being re-vegetated in accordance with the accepted *Mitigation Plan*, which recognizes that weeds are a typical problem with habitat restoration and specifies monitoring schedules as well as thresholds for tolerance of non-native species (relative total cover) and mechanisms for removal, as necessary. The final success criteria includes the following: "At the end of the five-year monitoring period, the percentage of weed species for the treatment transects should be equal to, or less than, that of the control transects." Following the completion of the management and monitoring period, invasive species may impact the site.

Edge Effects

The restoration sites were designed to minimize impacts from edge effects such as litter and artificial night-lighting. They are separated from nearby developments by roads and/or elevation differences; however, the close proximity to development may result in impacts from litter and domestic animals. Litter removal, fencing, and signage are

included in the site maintenance required by the *Vernal Pool Mitigation Plan* (Helix, 1998).

Trespass

Off-road vehicles were a major threat prior to restoration and development of the surrounding area. Fencing and signage were installed as part of site restoration in an effort to minimize trespass. However, the potential remains for trespass from the residents of nearby residential development, particularly children.

Required Management Activities

Pursuant to Biological Opinion 1-6-97-F-57, issued through a Section 7 consultation for a U.S. Army Corps of Engineers 404 permit, the following mitigation and management activities have been required as conditions of incidental take of Riverside fairy shrimp (*Streptocephalus woottoni*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), Otay Mesa mint (*Pogogyne nudiscula*), and spreading navarretia (*Navarretia fossalis*) resulting from the Robinhood Ridge project (LDR No. 86-1014).

The *Vernal Pool Mitigation Plan* (Helix, 1998) was accepted by the permitting agencies as mitigation for vernal pool impacts. The plan requires translocation of soils from impacted basins, preservation of 4,714 square feet of vernal pools and restoration of 3,354 square feet of disturbed vernal pool basins at two on-site preserves.

Implementation of the *Plan* will require a 5-year mitigation and monitoring program, including trash removal, weed control, hydrological/topographical modification, fence repair, and any necessary remedial measures, under the supervision of a re-vegetation specialist. All requirements of the *Plan* shall be completed prior to dedication in fee title of the preserve to the City.

As part of the mitigation plan, the site has been fenced with permanent, 6-foot high material selected to prevent OHV and pedestrian access. Steel signs in English and Spanish have been posted at regular intervals to provide notice of the ecological preserve and prohibit trespassing.

Management Recommendations

Active habitat restoration shall continue, as necessary, until the success criteria are met. These criteria, detailed in the approved *Vernal Pool Mitigation Plan* (Helix, 1998), shall be used by the restoration specialist and permitting agencies to determine the completeness of mitigation. Upon written notice that the mitigation has been completed to the satisfaction of the permitting agencies, the sites shall be dedicated to the City of San Diego in fee title; the City shall be responsible for long-term management of the preserve (see “Completion of Mitigation” in the *Vernal Pool Mitigation Plan* [Helix, 1998]).

This site was identified as necessary to stabilize the populations of *E. aristulatum*, *P. nudiscula*, *O. californica*, *N. fossalis*, *B. sandiegonensis*, and *S. woottonii*, by the adopted *Recovery Plan for Vernal Pools of Southern California* (USFWS, 1998).

All future management activities should promote the stabilization and recovery of these species.

In accordance with the *Plan*, fence repair will be required as necessary in perpetuity. Semi-annual maintenance patrols should occur to determine the need for fence repair and/or signage replacement, as well as litter and invasive species assessment.

Weeding within and immediately adjacent to vernal pools should be done by hand. In upland areas, mechanical removal may be necessary; however, herbicides should not be used in or adjacent to vernal pools. Targeted species for removal include, but are not limited to Italian ryegrass (*Lolium multiflorum*), rabbitfoot grass (*Polypogon monspeliensis*), yard knotweed (*Polygonum arenastrum*), fennel (*Foeniculum vulgare*) and curly dock (*Rumex crispus*).

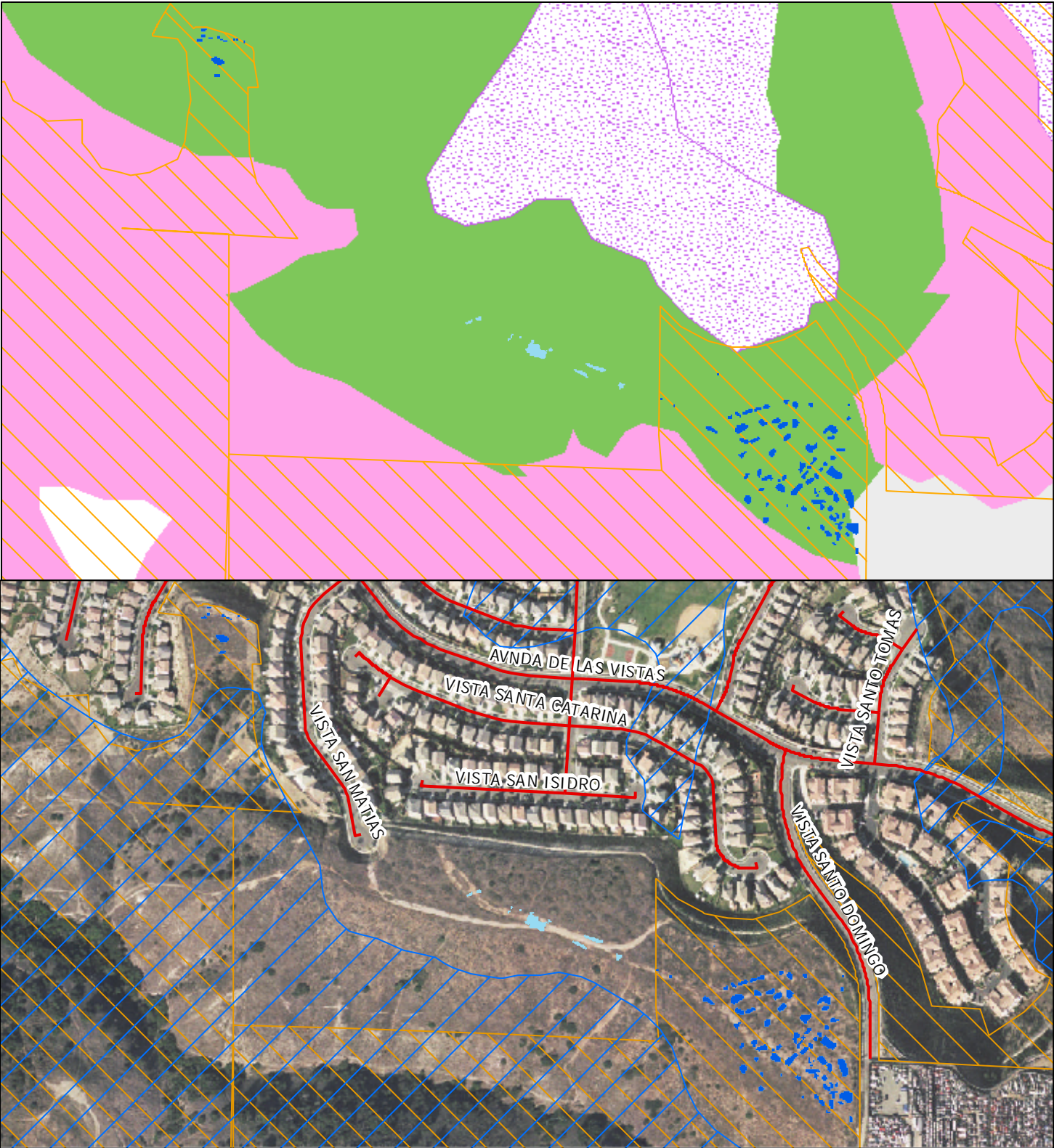
If the maintenance patrols determine that active management is necessary after completion of the mitigation period, it is recommended that volunteers and/or “Friends” groups be utilized for species surveys, litter patrols, weeding, etc. Due to the sensitivity of the habitats, adequate training shall be provided and crews shall be supervised by a qualified biologist.

As additional information becomes available, the site shall be managed to improve habitat conditions for native, solitary bees known as obligate pollinators for vernal pool species.

Given the proximity of the sites to residential neighborhoods, it is recommended that educational programs be provided through local schools, Home-Owner’s Associations (HOAs), community groups, etc. Topics may include the local ecosystem, including vernal pools, habitat preservation (i.e. MSCP), and should incorporate hands-on learning via neighborhood hikes, etc. Programs should strive to present information in a manner that will increase interest in the natural world and cultivate a sense of ownership of local open space, with the overall goal of developing positive neighborhood awareness of the preserve.

Land managers should encourage research at this site, especially relating to the long-term success of restored vernal pools and upland vegetation.

Figure 43



Robinhood Ridge (J 4-5)



- Roads
- MHPA
- Conserved Lands
- Vernal Pools at Site
- Adjacent Vernal Pools
- Coastal Sage Scrub
- Maritime Succulent Scrub
- Grassland
- Urban/Developed

Note: MHPA and Roads not shown in top map; vegetation mapping per Ogden 1997.

8.1.9.b

J 4

Site Description and Existing Conditions

J 4 is a privately-owned Otay Mesa site along the eastern edge of Dennergy Canyon near Vista San Isidro. This site is on the border of Multi-Family Residential and Open Space land use zones, and has not been conserved; nearby land uses include open space and MHPA (including the Robinhood Ridge Vernal Pool Preserve), transportation and residential development.

Eleven vernal pools (379 m² combined basin area [4079.522 ft²]) were mapped at J 4. Soils include Stockpen gravelly clay loam and upland vegetation is characterized by patchy Diegan coastal sage scrub. *Branchinecta* spp. were present in 2003.

Although considered separately here due to ownership and conservation status, the J 4 and Robinhood Ridge vernal pools are geographically related and part of the same complex and series. However, extensive restoration has occurred at Robinhood Ridge while the J 4 basins are in a natural and often disturbed state.

Threats

Development

J 4 is privately owned, un-conserved and located outside of the MHPA, and may be impacted by development. However, the basins are located on the southwest perimeter of the parcel adjacent to conserved open space areas. If development is proposed, it is unlikely that the vernal pools would be isolated from adjacent open space areas.

Invasive Species

Invasive species, particularly grasses, occur in both upland and vernal pool habitats at J 4.

Trespass

Trespass is generally limited to foot-traffic, although the area was historically impacted by off-road vehicles.

Litter

The site may be impacted by wind-blown trash and litter from trespassers. The impact of trash dumping has been minimized through the development of nearby residential neighborhoods.

Fire and Fire Suppression

The J 4 vernal pools are located between Dennergy Canyon and residential neighborhoods. The site would likely serve as a staging area in the event of a canyon fire, and the developed nature of much of the surrounding area would necessitate stringent fire-fighting measures.

Current Management Activities

No management activities planned or on-going.

Management Recommendations

Due to the presence of vernal pools, J 4 is recommended for conservation through public acquisition or private mitigation. Although it is outside the MHPA, the site is located adjacent to large open space areas including a vernal pool mitigation site. However, development is not precluded from this site; if development or conservation occurs, the following recommendations shall be implemented.

Restoration and/or enhancement of the vernal pools may be appropriate given the higher species diversity of nearby vernal pool sites, and should be considered if conservation occurs.

Fencing shall be installed to preclude access while maximizing connectivity with adjacent open space areas with lower risk of trespass. Appropriate bilingual signage shall be developed with both educational and no-trespassing elements.

A qualified biologist shall assess the site for non-native, invasive species, and shall recommend and implement a removal plan, if necessary. If the site is developed, non-native, invasive species shall not be utilized for landscaping purposes. Weeding within and immediately adjacent to vernal pools should be done by hand. In upland areas, mechanical removal may be necessary, however, no herbicides shall be used in or adjacent to vernal pools. Targeted species for removal include, but are not limited to Italian ryegrass (*Lolium multiflorum*), rabbitfoot grass (*Polypogon monspeliensis*), yard knotweed (*Polygonum arenastrum*), fennel (*Foeniculum vulgare*) and curly dock (*Rumex crispus*).

Annual maintenance shall be required to provide fence and sign repair and trash removal, as necessary.

Any future preserve/mitigation areas should be rezoned to Open Space at such time as the appropriate Community Plan is updated.

If the site is used for mitigation, a fire management plan shall be prepared and included in the adopted Habitat Management Plan.

If residential development is proposed for the site, it is recommended that educational programs be provided through local schools, Home-Owner's Associations (HOAs), community groups, etc. Topics may include the local ecosystem, including vernal pools, habitat preservation (i.e. MSCP), and should incorporate hands-on learning via neighborhood hikes, etc. Programs should strive to present information in a manner that will increase interest in the natural world and cultivate local stewardship of open space, with the overall goal of developing positive neighborhood awareness of the preserve.

Figure 44



This page is intentionally left blank.

8.1.9.c *Hidden Trails (J 2 W, J 31)*

Site Description and Existing Conditions

Hidden Trails (J 2 W, J 31) is located east of Hidden Trails Road and north of Seaglen Way in Otay Mesa. The vernal pool areas, on a north and south mesa, total 5.5 acres within a 130-acre preserve dedicated through approval of the Hidden Trails project (LDR 89-0739). The site was adjusted into the MHPA as part of the Hidden Trails project, and is zoned Open Space. The Hidden Trails vernal pools occur between a large residential development and conserved portions of Dennery Canyon, northwest of the Cal Terraces vernal pool preserve.

Twenty-nine vernal pools and road ruts were mapped during surveys for the Hidden Trails EIR (City of San Diego, 2000), while six natural vernal pools and road ruts (42 m² [457 ft²] combined basin area) were mapped at Hidden Trails during the Vernal Pool Inventory (City of San Diego, 2004). Soils on-site include Olivenhain cobbly loam and Stockpen gravelly clay loam, and upland vegetation is disturbed coastal sage scrub and maritime succulent scrub. *Branchinecta* spp. were present in 2003.

Prior to restoration, impacts by recreational off-road vehicles and illegal immigrant and Border Patrol traffic contributed to invasion by exotic species.

Although considered separately here due to ownership and conservation status, the Hidden Trails site is geographically related to vernal pools at Dennery Canyon West, J 2 West, Otay Mesa Road, and Cal Terraces, and part of the same complex and series.

Threats

Development

Hidden Trails was conserved as part of the Hidden Trails project (LDR 89-0739); as part of project approval, the vernal pool areas were restored and adjusted into the MHPA.

Restoration Success

The *Mitigation Plan for Hidden Trails* (Helix, 2003) specifies success criteria for the restored vernal pools, including species richness, vegetative cover, target species, and hydrologic regime. Remedial measures will be required if restoration success criteria are not met within the specified time period.

Invasive Species

Prior to restoration, non-native invasive species were introduced through disturbance associated with off-road vehicle use, etc. Both uplands and vernal pools are being re-vegetated in accordance with accepted mitigation plans, which recognize that weeds are a typical problem with habitat restoration and specify monitoring schedules as well as thresholds for tolerance of non-native species (relative total cover) and mechanisms for removal, as necessary.

Trespass

Trespass is generally limited to foot-traffic, although the area was historically impacted by off-road vehicles. The site has been fenced and signed along its boundaries with development as part of the restoration effort; fencing was not recommended for

This page is intentionally left blank.

installation along the boundaries of the preserve where it abuts natural open space in Dennery Canyon.

Litter

The site may be impacted by wind-blown trash and litter from trespassers; occurrences of dumping have been limited by nearby developments.

Fire and Fire Suppression

The Hidden Trails vernal pools are located between Dennery Canyon and residential neighborhoods. The site may serve as a staging area in the event of a canyon fire, and the developed nature of much of the surrounding area would necessitate stringent fire-fighting measures.

Required Management Activities

Pursuant to development permits acquired for the Hidden Trails project (LDR 89-0739) and associated CDFG 1603 Streambed Alteration Agreement (R5-2002-0004), ACOE NWP 39, and the RWQCB 401 water quality certification, the following mitigation and management activities have been required as permit conditions. The Hidden Trails project did not impact vernal pools; however, CDFG and RWQCB mitigation specified acceptance of vernal pool enhancement/restoration for general wetland impacts.

The *Mitigation Plan for Hidden Trails* (Helix, 2003) specifies enhancement of 0.08 acres and restoration of 0.50 acres of vernal pools, with restoration of maritime succulent scrub in the watershed and upland areas. These areas are to be monitored and managed for five years after the initial restoration efforts, and must meet success criteria for species richness, vegetative cover, vernal pool species, weed cover and hydrology.

Implementation of the *Plans* include a 5-year mitigation and monitoring program includes trash removal, weed control, hydrological/topographical modification, and any necessary remedial measures, under the supervision of a re-vegetation specialist. Success criteria for the restoration are detailed and final completion of the project shall be subject to review by the permitting agencies.

Vernal pools and upland restoration areas will be monitored annually for five years following initial restoration efforts, and annual reports will be prepared and submitted to the permitting agencies.

As part of the project, boundaries between the restoration areas and development have been fenced with permanent chain link and appropriate signage has been posted.

Management Recommendations

Active habitat restoration shall continue, as necessary, until the success criteria are met. These criteria, detailed in the approved mitigation plan (see Helix, 2003), shall be used by the restoration specialist and permitting agencies to determine the completeness of mitigation. Only upon written notice from the permitting agencies shall the restoration be deemed complete.

Fence repair will be required as necessary in perpetuity. Semi-annual maintenance patrols should occur to determine the need for fence repair and/or signage replacement, as well as litter and invasive species assessment.

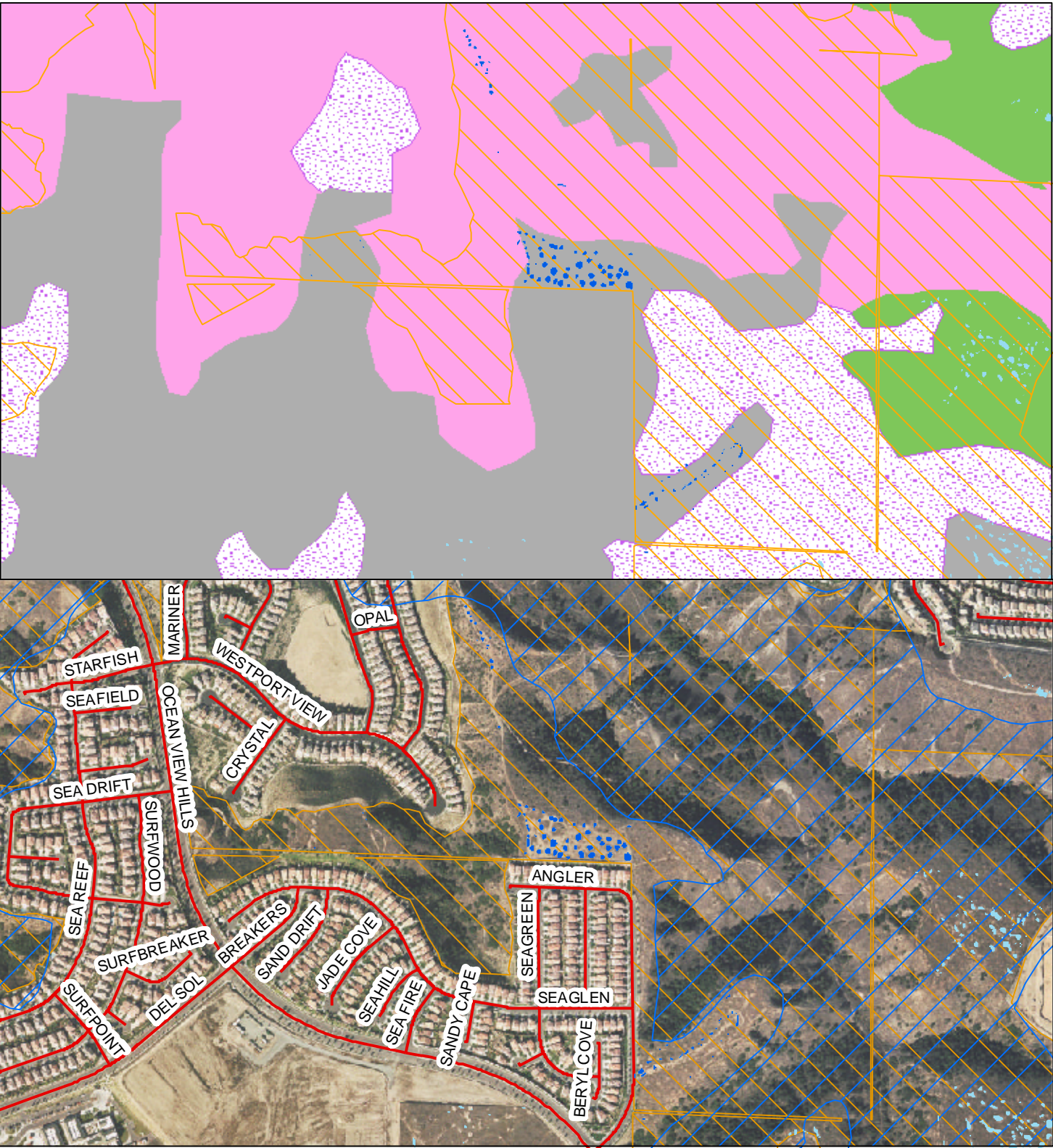
If weed control is deemed necessary, weeding within and immediately adjacent to vernal pools should be done by hand. In upland areas, mechanical removal may be necessary, however, herbicides should not be used in or adjacent to vernal pools. Targeted species for removal include, but are not limited to Italian ryegrass (*Lolium multiflorum*), rabbitfoot grass (*Polypogon monspeliensis*), yard knotweed (*Polygonum arenastrum*), fennel (*Foeniculum vulgare*) and curly dock (*Rumex crispus*).

If the maintenance patrols determine that active management is necessary after completion of the mitigation period, all work should take into consideration the sensitivity of on-site habitats, including adequate training of crews and supervision by a qualified biologist.

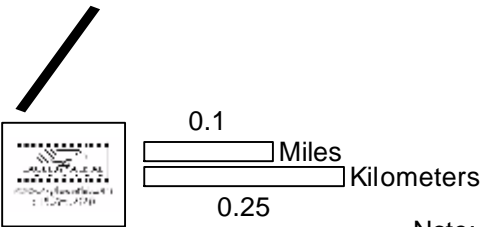
Land managers should encourage research opportunities, especially relating to the long-term success of restored and created vernal pools and upland vegetation.

Educational programs are recommended for local schools, Home-Owner's Associations (HOAs), community groups, etc. Topics may include the local ecosystem, including vernal pools, habitat preservation (i.e. MSCP), and should incorporate hands-on learning via neighborhood hikes, etc. Programs should strive to present information in a manner that will increase interest in the natural world and cultivate local stewardship of open space, with the overall goal of developing positive neighborhood awareness of the preserve.

Figure 45



Hidden Trails (J 2 W, J 31)



- Roads
- MHPA
- Conserved Lands
- Vernal Pools at Site
- Adjacent Vernal Pools
- Coastal Sage Scrub
- Maritime Succulent Scrub
- Grassland
- Disturbed Land

Note: MHPA and Roads not shown in top map; vegetation mapping per Ogden 1997.

This page is intentionally left blank.